



APOHD-PTZ20

1080P HD PTZ Speed Dome

User's Manual

V1.0 10 / 2013

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Welcome

Thank you for purchasing the **APOHD-PTZ20 Speed Dome**.

This user's manual is designed to be a reference tool for the installation and operation of your system.

Here you can find information about the corresponding IP camera's features and functions, as well as a detailed installation method.

Before installation and operation please read the following safeguards and warnings carefully!



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Important Safeguards and Warnings

1 . Electrical safety

- All installation and operation here should conform to your local electrical safety codes.
- We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.
- We are not liable for any problems caused by unauthorized modification or attempted repair.

2 . Transportation Security

- No heavy stress, violent vibration or contact with water is allowed during transportation, storage and installation.
- Please use the original packing material (or the material of the same quality) when you ship it back to the manufacturer.

3 . Installation

- Do not apply power to the product before completing installation.
- Do not put object(s) on the product.

4 . Environment

- This product should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.
- Please keep it away from environments that contain electromagnetic radiation or objects that produce it.
- Please keep sound ventilation around the device at all times.
- Do not allow the water and other liquid to penetrate into the device if casing has been compromised. This series product complies with the IP66 standard specified in the Degrees of Protection Provided by Enclosure.
- Please make sure the CCD (CMOS) component is away from the radiation of the laser beam device. Otherwise it may result in CCD (CMOS) optical component damage.

5. Daily Maintenance

- Current series product has no power button. Please unplug all corresponding power cables before your begin installation or daily maintenance work.
- Please keep the dustproof cap back to protect the CCD or CMOS part if the device does not work for a long time.
- Do not touch CCD (CMOS) component. You can use the blower to clean the dust on the surface of the device. You can use the dry cloth with some alcohol or mild detergent to clear if necessary.
- Do not use volatility solvent such as the benzene or thinner, or detergent with strong abrasability. It may result in lens damage or it may adversely affect the device performance.

- If there is too much dust, please use the water to dilute the mild detergent first and then use it to clean the device. Finally use the dry cloth to clean the device.

6. About Accessories

Always use all the accessories recommended by manufacturer.

Before installation, please open the package and check that all the components are included in the package. Contact your local retailer ASAP if something is missing in your package.

1 Features and Functions

1.1 General Introduction

This network camera integrates traditional camera and network video technology. It adopts both audio and video data collection and transmission simultaneously. Because of inbuilt internal hardware it can connect to a network directly without any auxiliary device. When you want to access the camera, you can use a web browser running off the network at the client-end. Due to its multiple functions it allows for various use in many environments such office, bank, road & traffic monitoring, etc.

This series network camera product uses the latest industry standard H.264 video and G.711a audio compression technology, which guarantees the best audio and video quality whilst reducing file sizes. Using the Sony IMX122 digital imaging chipset the camera can record in full 1080P HD resolution so that you can capture highly detailed widescreen video images. This will allow you to monitor your premises in finer detail and can interpret incidents caught on camera much quicker.

The PTZ operational functions allows for smooth full 360 degree rotation and 180 degree tilt movements. The camera's interface will allow you full control over the image quality and telemetry settings with up to 255 presets that can be programmed in. You can also be able to program up to 8 tour patterns so that it can perform a fully customised and extensive scan of the location it is installed within.

It supports real-time monitor and listening at the same time via the inbuilt microphone. If you want to communicate with a person(s) in view of the camera it also supports dual-way bidirectional talk. The built-in protection enclosure and waterproof design conforms to the IP 66 level. It has a sound waterproof function suitable for use in the outdoor environments.

1.2 Features

- 20x Optical zoom
- 1/3" 2 Megapixel Exmor CMOS
- H.264 & MJPEG dual-stream encoding
- Max 25/30fps@1080p resolution
- WDR(DWDR), Day/Night(ICR), DNR (2D&3D),Auto iris, Auto focus, AWB, AGC,BLC
- Multiple network monitoring: Web viewer, CMS & PSS
- Max 400 °/s pan speed, 360° endless pan rotation
- Up to 255 presets, 5 auto scan, 8 tour, 5 pattern
- Built-in 7/2 alarm in/out
- Support intelligent 3D positioning with DH-SD protocol
- Micro SD memory
- IP67
- Easy installation

1.3 Specifications

CAMERA	Image Sensor		1/3" Exmor CMOS
	Effective Pixels		1944(H) x 1092(V), 2 Megapixels
	Scanning System		Progressive
	Electronic Shutter Speed		1/1 ~ 1/30,000s
	Min. Illumination		Colour: 0.05 Lux/ F1.6; B/W 0.005 Lux/F1.6
	S/N Ratio		More than 50dB
	Video Output		BNC (1.0Vp-p/75 Ω), PAL/NTSC
CAMERA FEATURES	Day/Night		Auto(ICR) / Colour / B/W
	Backlight Compensation		BLC/HLC/DWDR (Digital WDR)
	White Balance		Auto/ATW/Indoor/Outdoor/Manual
	Gain Control		Auto/Manual
	Noise Reduction		2D/3D
	Privacy Masking		Up to 24 Areas
	Digital Zoom		16x
LENS	Focal Length		4.7mm ~ 94.0mm (20x Optical zoom)
	Max Aperture		F1.6 - F3.5
	Focus Control		Auto / Manual
	Angle of View		H: 55.4°-3.2°
	Close Focus Distance		10mm ~ 1000mm
PTZ	Pan/Tilt Range		Pan: 0°-360° endless; Tilt: -2°- 90°, auto flip 180°
	Manual Control Speed		Pan: 0.1° ~300° /s; Tilt: 0.1° ~250° /s
	Preset Speed		Pan: 400°/s; Tilt: 300°/s
	Preset		80(DH-SD), 255(Pelco-P/D)
	PTZ Mode		5 Pattern, 8 Tour, Auto Pan, Auto Scan
	Speed Setup		Human-oriented focal length/ speed adaptation
	Power Up Action		Auto restore to previous PTZ and lens status after power failure
	Idle Motion		Activate Preset/Pan/Scan/Tour/Pattern if there is no command in the specified period
	Time Task		Auto activation of Preset/Pan/Scan/Tour/Pattern by preset-time
VIDEO	Protocol		DH-SD, Pelco-P/D (Auto recognition)
	Compression		H.264 / MJPEG
	Resolution		1080P(1920×1080) / 720P(1280×720) / D1(704×576/704×480) / CIF(352×288/352×240)
	Frame Rate	Main Stream	1080P/720P(1 ~ 25/30fps)
		Sub Stream	D1/CIF (1 ~ 25/30fps)
AUDIO	Bit Rate		H.264: 56K ~ 8192Kbps, MJPEG: 56K ~ 20480Kbps
	Compression		G.711a / G.711u(32kbps) / PCM(128kbps)
	Interface		1/1 channel In/Out

(Continued next page)

NETWORK	Ethernet	RJ-45 (10/100Base-T)
	Protocol	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour
	ONVIF	ONVIF Ver. 2.0 conformance
	Max. User Access	20 users
	Smart Phone	iPhone, iPad, Android, Windows Phone
AUXILIARY INTERFACE	Memory Slot	Micro SD, Max 32GB
	RS485	1
	Alarm	7/2 Channel In/Out
GENERAL	Power Supply	AC 24V/3A (±10%)
	Power Consumption	12W, 25W (Heater on)
	Working Temperature	-40°C—60°C (outdoor) <90% Relative Humidity
	Ingress Protection	IP97
	Dimensions	222mm x 322mm
	Weight	5.0Kg

2 QUICK INSTALLATION SPEED DOME INSTALLATION

2.1 Installation Preparation

Check installation space and installation location intension

Please make sure the installation environment has enough space to install the speed dome and its corresponding bracket. Please also make sure the ceiling, wall and the bracket can support the speed dome and its corresponding installation component. The location and fixing should be able to safely hold 4 times the weight of the camera.

Cable information

Please select the cable according to your transmission distance.

The minimum video coaxial-cable requirement is:

- 75 ohm.
- Full cable with copper conductor
- 95% knitted copper shield

International Model	Max Distance (Ft/M)
RG59/U	750ft (229m)
RG6/U	1,000ft (305m)
RG11/U	1,500ft (457m)

Setting the dial switch button

Set the dial switch button according to control protocol and speed dome address.

Please keep all package material well for future use

- Please keep the speed dome packaging material in case you need to send it back to your local retailer or manufacturer for maintenance work.
- Non-original package material may result in device damage during the transportation.

Check Accessories

Before the installation, please check the accessories one by one according to the packing list. Please make sure that all parts are included.

IMPORTANT: The quick installation speed dome power is AC 24V/3A.

2.2 Installation

The speed dome has several types of installation brackets. You can refer to the following contents for detailed information. This section will show you how to install the speed dome on to a wall mounted bracket.

Open the transparent cover and take out the packing material (shown as EPE in the diagram below), which is around the speed dome driver. Please remove the protective plaster from the driver and take off the camera lens cap. If you do not do this the motorised camera movements will not work as desired. See Figure 2-1.

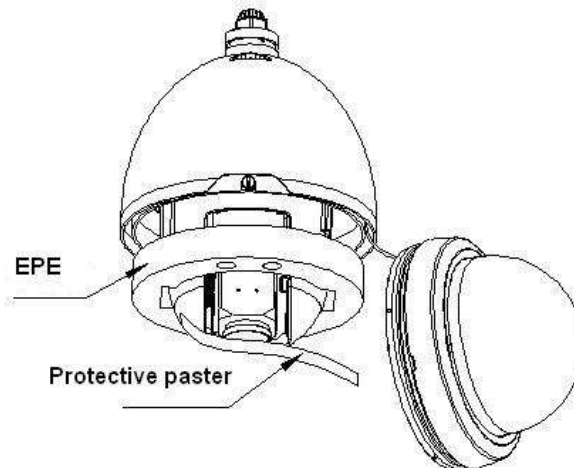


Figure 2-1

2.2.1 Address and Baud Rate Setup

Now you can set the quick installation speed dome address and baud rate. The speed dome interface is shown as below (see Figure 2-2). There are two dial switches: **SW1** and **SW2**. Using these dials you can set the address, baud rate, communication protocols, etc. Please refer to **Chapter 2.4** for detailed information.

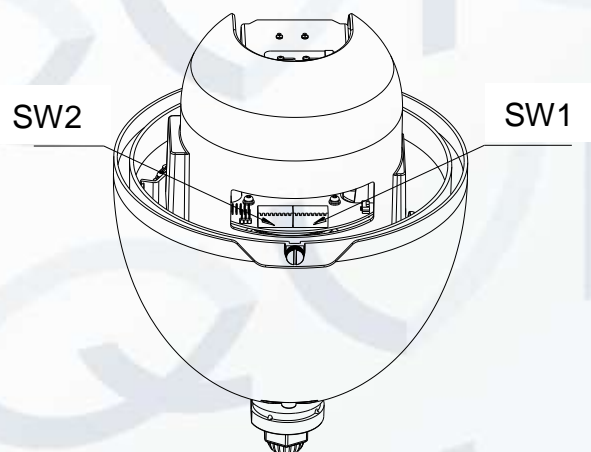


Figure 2-2

2.2.2 Install the transparent cover

1. Firstly you need to check the steel wire of the bracket to see if it is firmly secure or not.
2. Please line up the captive screws to the quadrate groove of the bracket and then push the bracket into the internal enclosure. Fix these two captive screws in to place. See Figure 2-3.

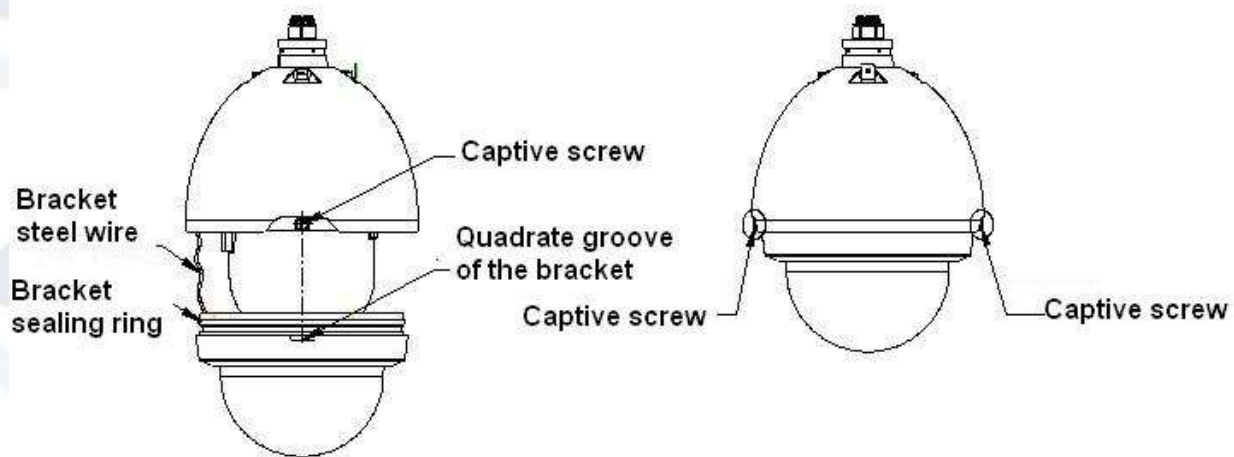


Figure 2-3

3. Now you can install the quick installation port. Please twist the Teflon tape around the screw thread of the quick installation port and turn it into the screw thread of the wall mount bracket. Use M4 stainless screws to secure firmly. See Figure 2-4.

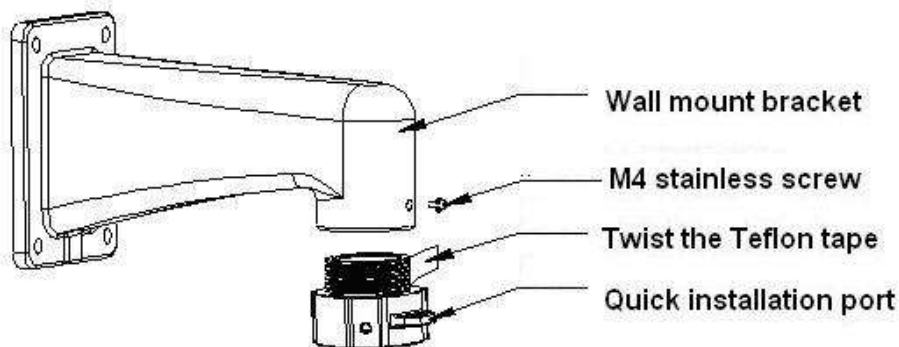


Figure 2-4

4. Now you can begin the cable connection.
5. Connect the steel wire of the quick installation cover to the hook on the quick installation port.
6. Connect the reserved integration cable from the wall mount bracket to the corresponding power cable, video output cable, RS485 control cable and alarm input/output port (if necessary) of the multiple-

function composite cable coming from the quick installation speed dome. Paste the insulating tape in the connection position to make sure everything is waterproof. See Figure 2-5.

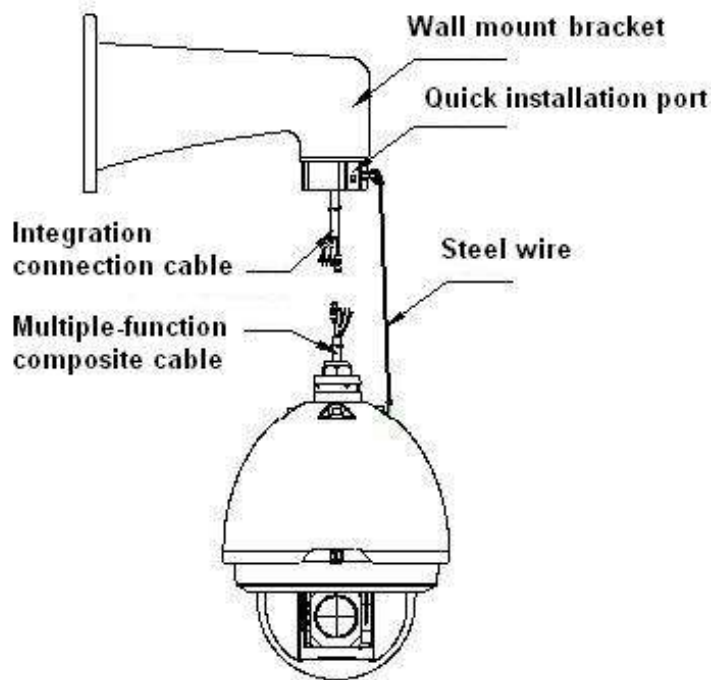


Figure 2-5

Note: The video port is covered by the high ratio heat shrunk tube. After you have completed the cable connection, please heat the tube to make sure the video port is damp proof and water proof.

2.2.3 Install the speed dome

1. After you complete the above steps, please pull the integration cable and multiple-function composite cable through to the wall mount bracket.
2. Line up the straight edge, of the internal enclosure within the quick installation speed dome, to the straight edge of the quick installation port, and then slowly push the speed dome to the bottom of the port. Use your hands to turn the three stainless steel screws, on the quick installation port, in to the groove of the speed dome's internal enclosure. Turn the screws on the straight edge of the quick installation port to the $\Phi 6.5$ hole of the speed dome's internal enclosure. Use the inner hex tool to fix these three screws. Installation should now be complete. See Figure 2-6.

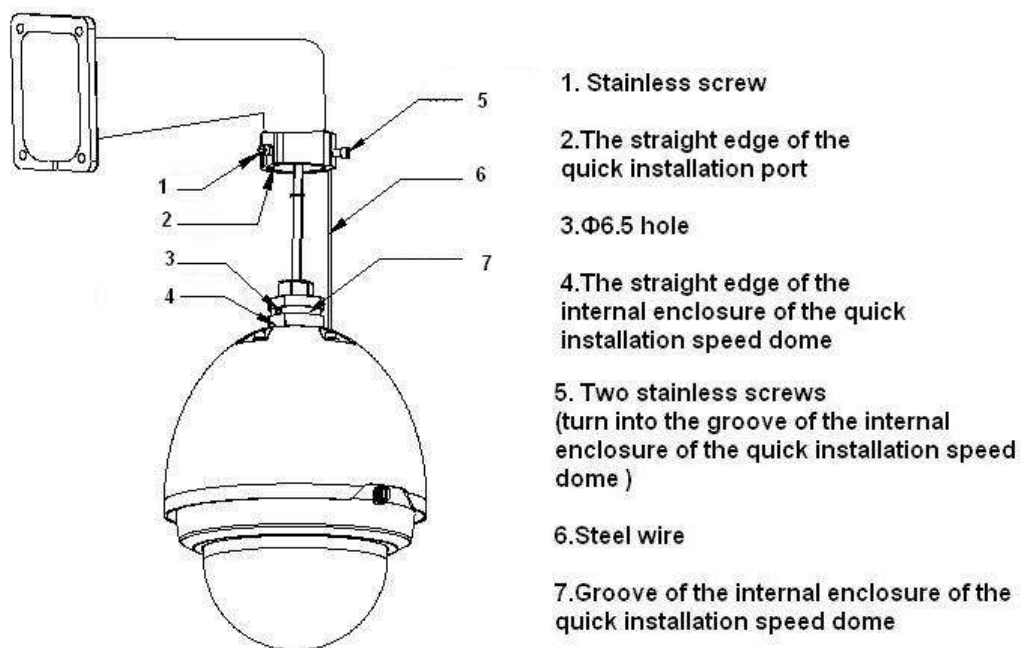


Figure 2-6

IMPORTANT: After the installation, please make sure:

- The three stainless steel screws on the quick installation port are firmly secure.
- The quick installation speed dome is fixed into place securely.
- The speed dome is straight and leaning at an angle causing the bracket to not sit flush to the installation surface.
- The wiring/cabling is firmly secure.

Once you have completed the installation, the interface should look like the image shown in Figure 2-7.

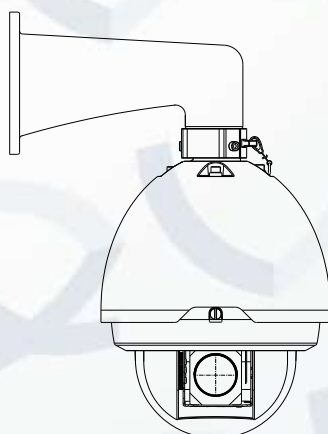


Figure 2-7

2.3 Initial Setup

The default setup is:

- Address: 1
- Baud rate: 9600

2.4 Dial Switch Setup

The two dial switches found on the speed dome are labeled as **SW1** and **SW2**. These are to specify the speed dome parameters, which include the protocols, baud rates, addresses, etc. When the button is set to ON, it is 1.

When using the SW1 and SW2 dials, 1 is the lowest bit and the 8 is the highest bit. See Figure 2-8.

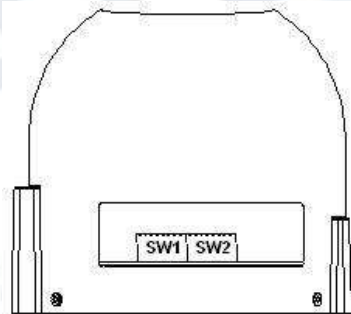


Figure 2-8

2.4.1 Communication protocol and Baud rate

Please refer to the protocol sheets for detailed information:

Protocol				Baud rate		Parity	
1	2	3	4	5	6	7	8

1	2	3	4	Communication Protocol
OFF	OFF	OFF	OFF	DH-SD (Compatible with China industrial standard protocol)
ON	OFF	OFF	OFF	PELCO-D
OFF	ON	OFF	OFF	PELCO-P
X	X	X	X	Reserved

Please refer to the baud rate sheet for detailed information:

5	6	Baud Rate
OFF	OFF	9600bps
ON	OFF	4800bps
OFF	ON	2400bps
ON	ON	1200bps

Please refer to the parity setup sheet for detailed information:

7	8	Parity
OFF	OFF	NONE
ON	OFF	EVEN
OFF	ON	ODD
ON	ON	NONE

2.4.2 Address Setup

The speed dome address setup interface is shown as below. See Figure 2-9.

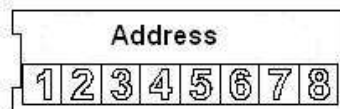


Figure 2-9

The encode mode adopts a binary system. 1 to 8 are valid bits. The highest address bit is 255. You can refer to the following sheet for more information:

Address	1	2	3	4	5	6	7	8
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
.....							
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

3 BRACKET DIMENSIONS

3.1 Wall mount bracket

The wall mount bracket dimensions are shown as below. See Figure 3-1.

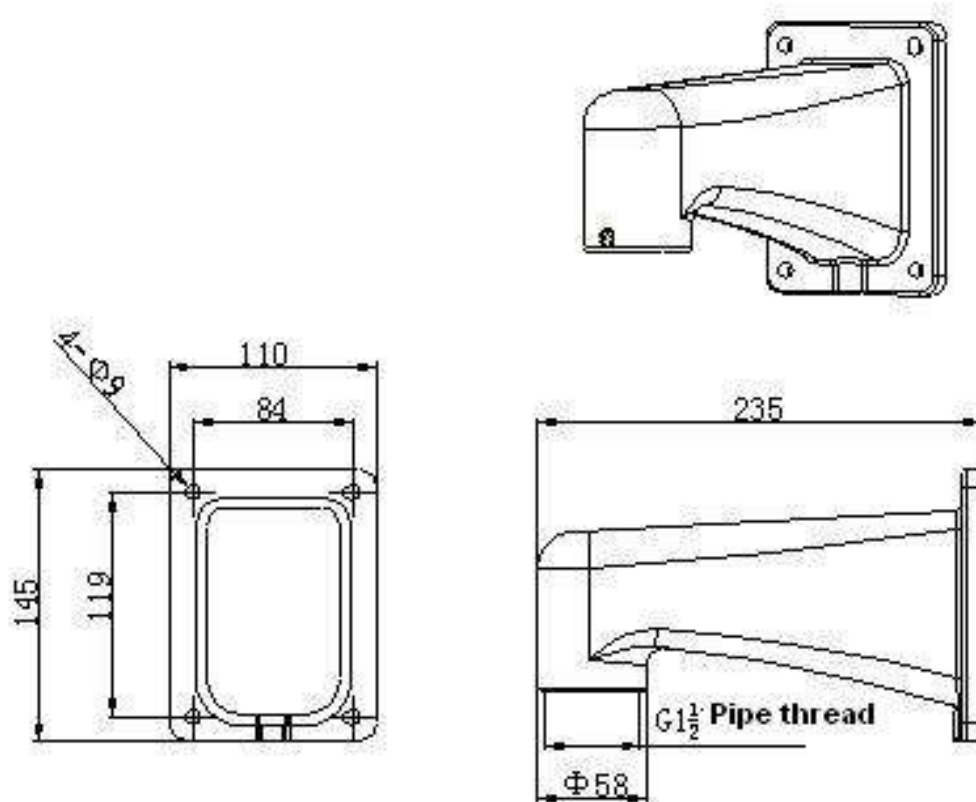
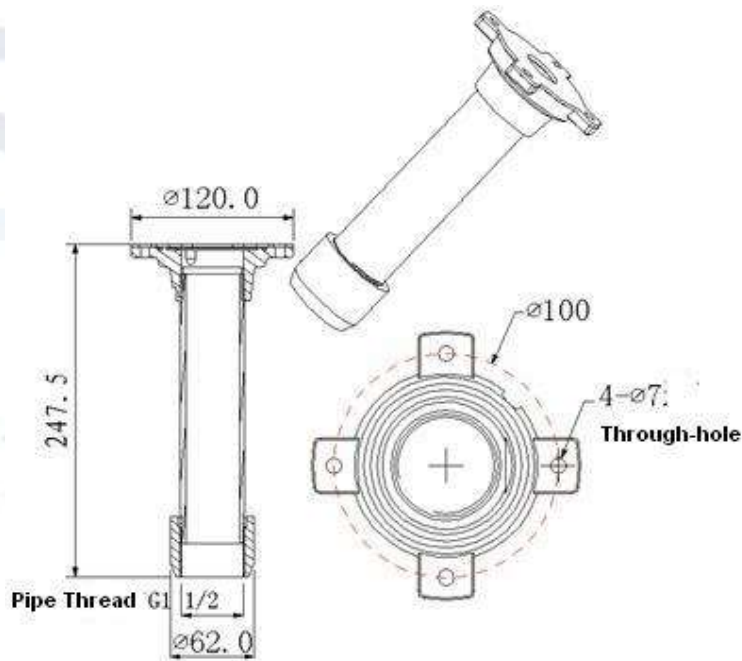


Figure 3-1

3.2 Hanging mount bracket (Multiple Lengths)

The hanging mount bracket is shown as below. See Figure 3-2.



The bracket length setup values are:

- 200mm
- 300mm
- 500mm

You just need to replace the connection pole.

Figure 3-2

3.3 Corner mount bracket

The corner mount bracket is shown as below. See Figure 3-3.

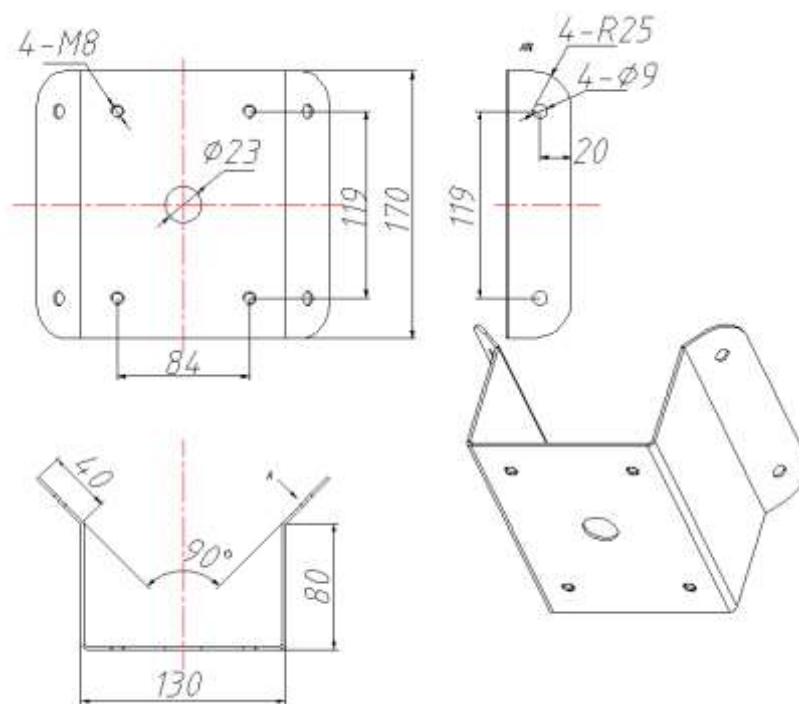


Figure 3-3

3.4 Pole mount bracket

The corner mount bracket is shown as below. See Figure 3-4.

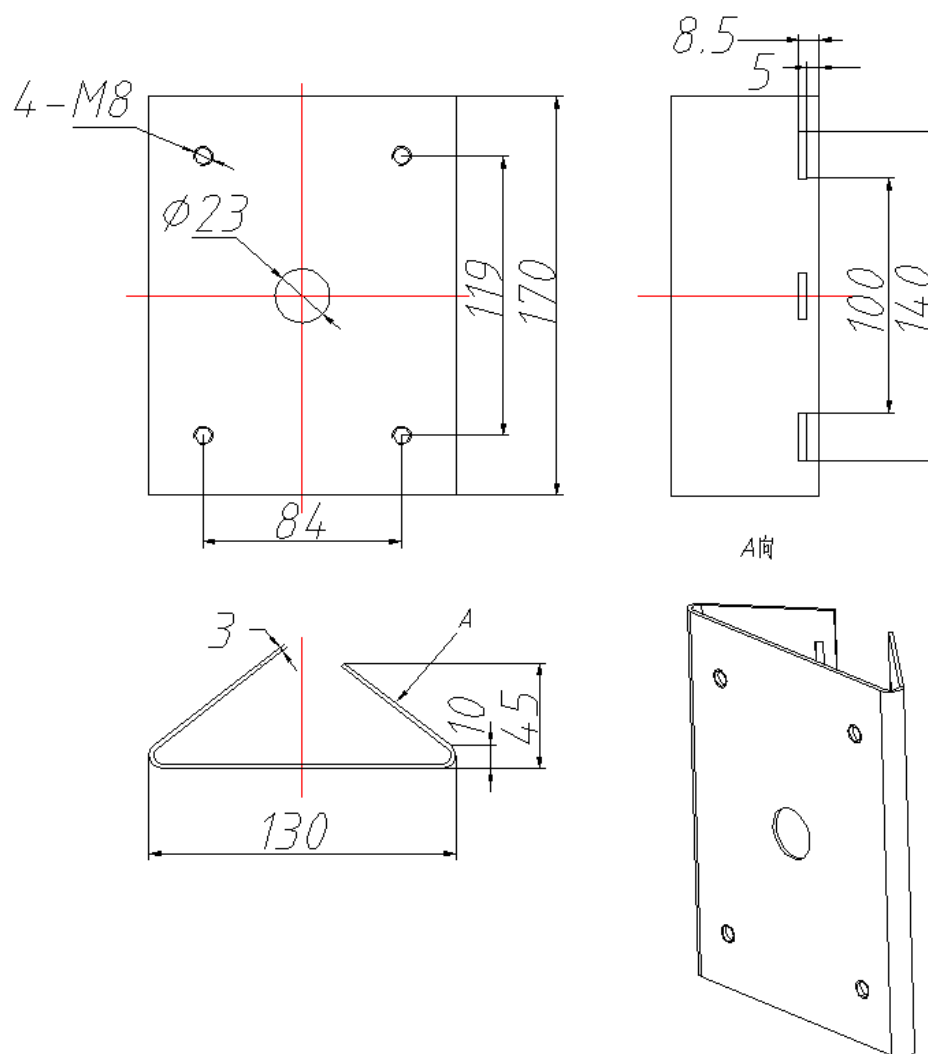


Figure 3-4

4 WALL MOUNT BRACKET INSTALLATION

4.1 Component Installation

Wall mount bracket is shown as below. See Figure 4-1.

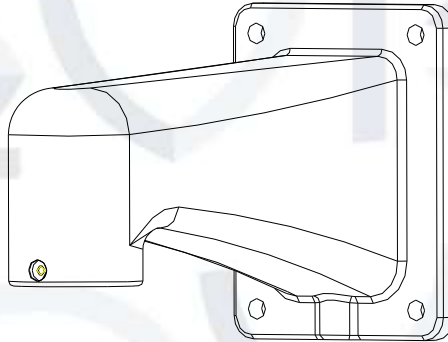


Figure 4-1

4.2 Installation

4.2.1 Installation Requirements

The wall mount speed dome can be installed onto a hard construction wall in either indoor or outdoor environments. Before the installation, please make sure:

- The wall is thick enough to install the expansion bolt.
- The wall can at least sustain the 4x weight of the speed dome.

4.2.2 Installation Steps

Draw 4 points, on to the installation wall, which line up with the screw holes wall mount bracket. Then you can drill four holes and insert the expansion bolts (not provided). Use four hex bolts and flat washers to fix the bracket in to the expansion bolts. It should now be fixed into position securely (see Figure 4-2).

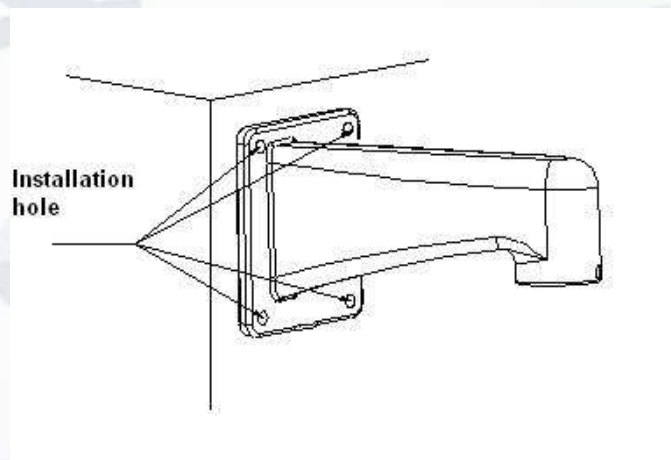


Figure 4-2

Install the speed dome onto the bracket. See Figure 4-3.

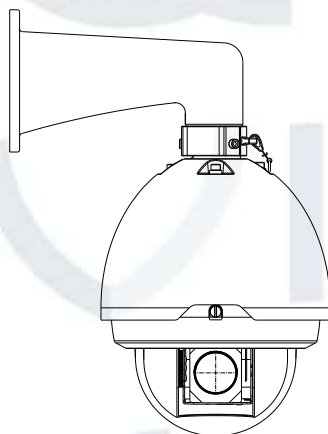


Figure 4-3

Please refer to chapter 2.2 for detailed installation information.

5 HANG MOUNT BRACKET INSTALLATION

5.1 Component Installation

Hang mount bracket and its components are shown as below. See Figure 5-1.

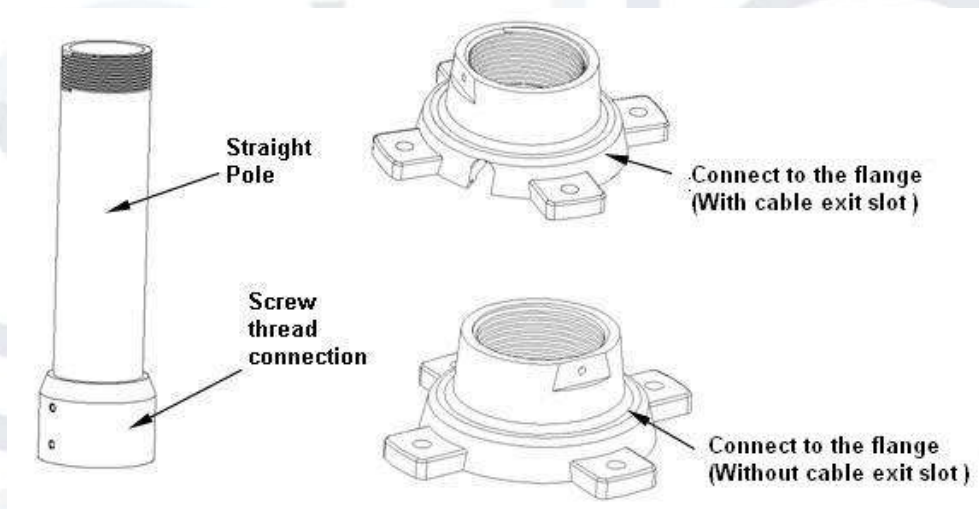


Figure 5-1

5.2 Installation

5.2.1 Installation Requirements

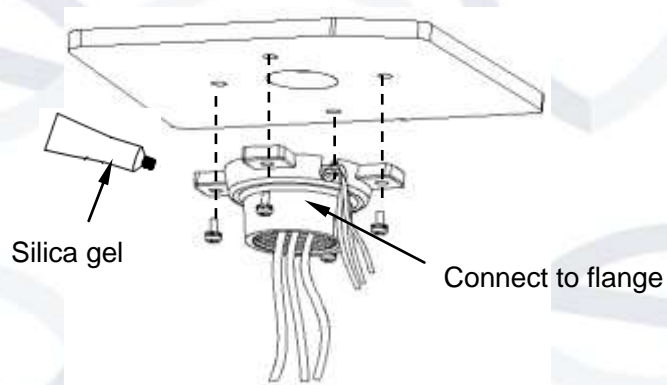
The hang mount speed dome can be installed onto a solid construction wall located in either indoor or outdoor environments. Before the installation, please make sure:

- The wall is thick enough to install the expansion bolt.
- The wall can at least sustain the 4x weight of the speed dome.

5.2.2 Installation Steps

Loosen the M4 bolt, on the flange side, to separate the flange and sleeve. Pull the integration cable through the airproof slot at the bottom of the flange and then connect to the centre hole to the flange. Please secure the flange on the ceiling. See Figure 5-3.

Note: if the speed dome is installed within an outdoor environment, you need to paste silica gel onto the surface of the flange, on the wall surface and on the cable exit hole.



Pull the cable through the steeve and then secure the steeve to the flange. Fix the M4 bolt into place.

Please note, if the speed dome is installed in an outdoor environment, you need to paste enough Teflon tape at the top screw thread of the steeve and then turn the steeve onto the flange firmly. Please paste the silica gel on the steeve connection surface to waterproof it. See Figure 5-4.

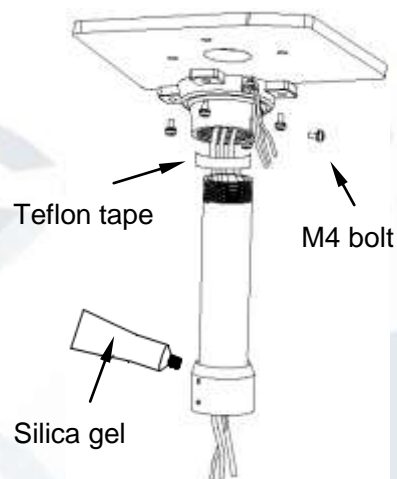


Figure 5-4

Draw 4 points, on to the installation wall, which line up with the screw holes wall mount bracket. Then you can drill four holes and insert the expansion bolts (not provided). Use four hex bolts and flat washer to fix the bracket in the expansion bolts. See Figure 5-5.

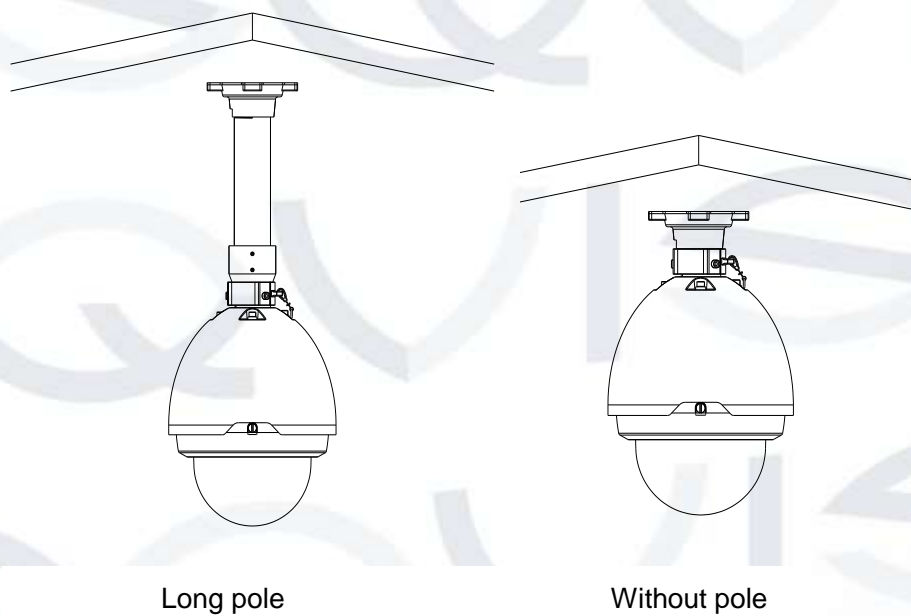


Figure 5-5

Please refer to chapter 2.2 for detailed installation information.

6 CORNER MOUNT BRACKET INSTALLATION

6.1 Component Installation

Corner mount bracket and its components are shown below. See Figure 6-1.

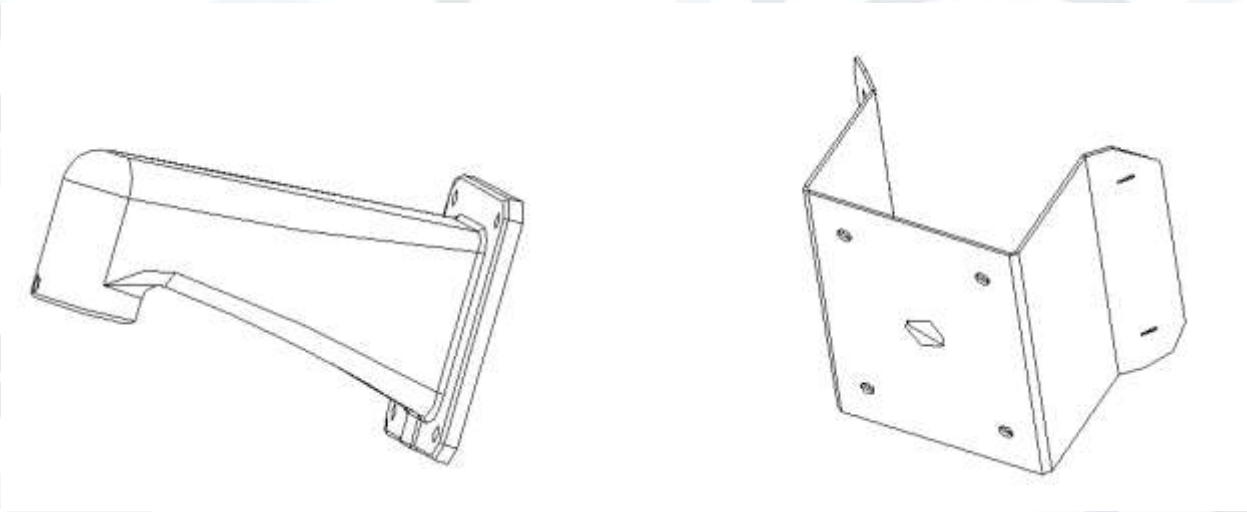


Figure 6-1

6.2 Installation

6.2.1 Installation Requirements

The corner mount for the speed dome can be installed onto the corner of a solidly constructed wall. Before the installation, please make sure:

- The wall is thick enough to install the expansion bolt.
- The wall can at least sustain the 4x weight of the speed dome.

6.2.2 Installation Steps

Draw 4 points, on to the installation wall, which line up with the holes of the corner installation accessories. See Figure 6-2.

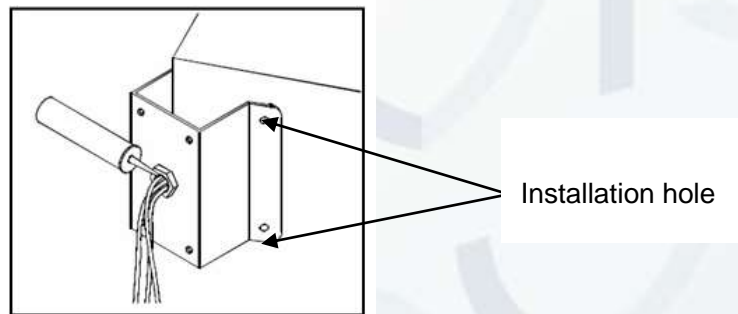


Figure 6-2

Then you can drill four holes and insert the M8 expansion bolts. Pull the power cable, video/control cable and the alarm cable through the centre hole on the bottom of the corner bracket, the waterproof adhesive, and the centre of the bracket. Please reserve the enough cable connection length and then use the M8 expansion bolt to secure the corner mount bracket chassis onto the wall. See Figure 6-3.

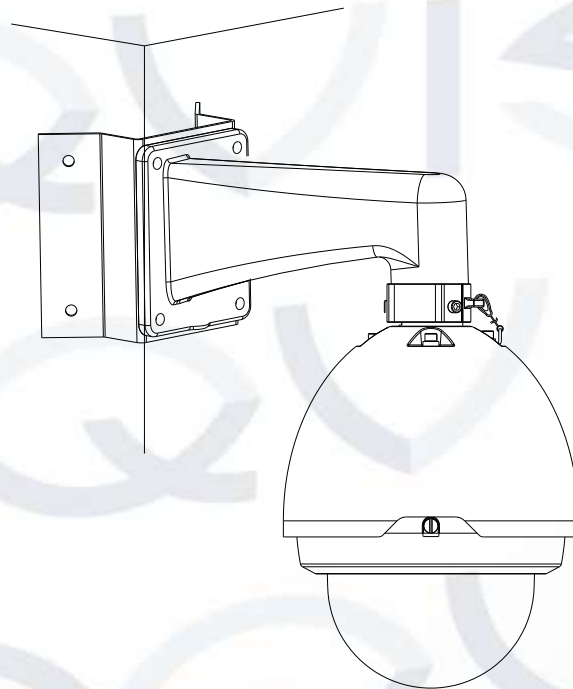


Figure 6-3

Please refer to chapter 2.2 for detailed installation information.

7 POLE MOUNT BRACKET INSTALLATION

Pole mount bracket and its components are shown as below. See Figure 7-1.

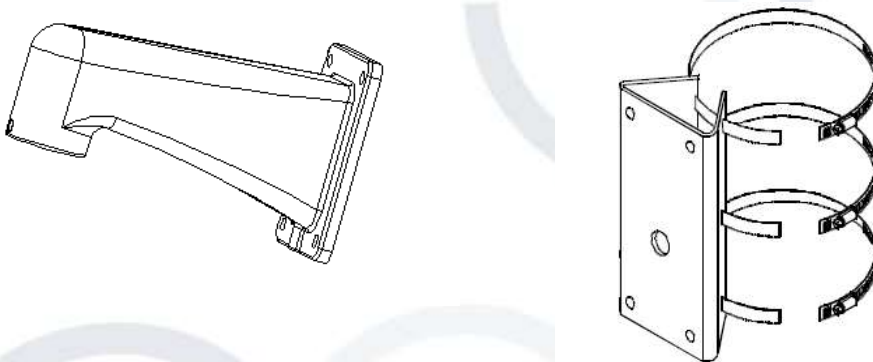


Figure 7-1

7.1 Installation

7.1.1 Installation Requirements

The corner mount speed dome can be installed in the solidly constructed wall in either indoor or outdoor environments. Please make sure:

- Before the installation, please make sure the pole bracket can sustain 4X the weight of the speed dome.
- The diameter of the pole structure should comply with the installation dimensions of the clamp. Default factory clamp is six inches for the column of ϕ 130-152mm. It can work with the pole installation bracket.
- You can adjust the diameter and the value (clamp specification) is : ϕ 59-82mm、 ϕ 84-108mm、 ϕ 103-127mm, ϕ 130-152mm、 ϕ 155-178mm、 ϕ 180-203mm, ϕ 194-216mm.

The clamp is shown as in Figure 7-2.

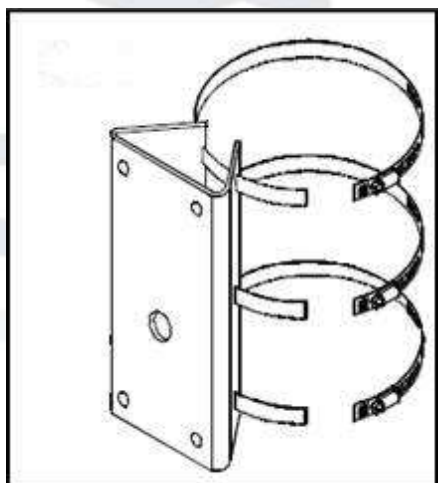


Figure 7-2

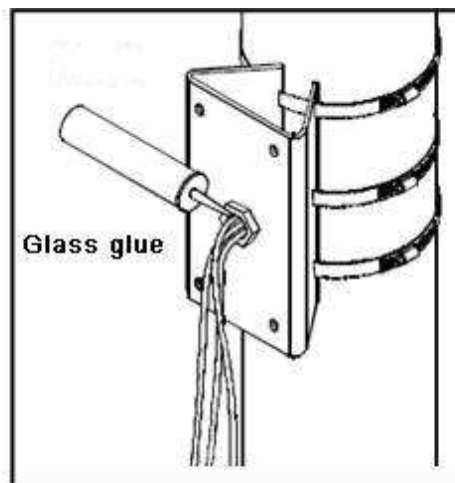
Please refer to

Figure 7-3 to install clamp and pole bracket.

Pull the cable out of the pole accessories and then use clamp to fix the pole accessories to the pole. Finally, you can use glass cement to the output hole to waterproof it.



Clamp and pole bracket connection



Pole bracket and the pole connection

Figure 7-3

After you installed bracket and external cover, loosen the captive screws and open the panel, pull the power cable through the hanging bracket and then fix the hanging bracket to the wall. Please make sure it is waterproof between the bracket and the wall. See Figure 7-4.

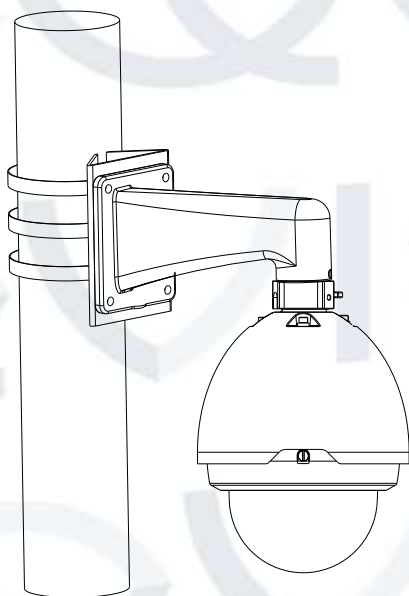


Figure 7-4

Please refer to chapter 2.2 for detailed installation information.

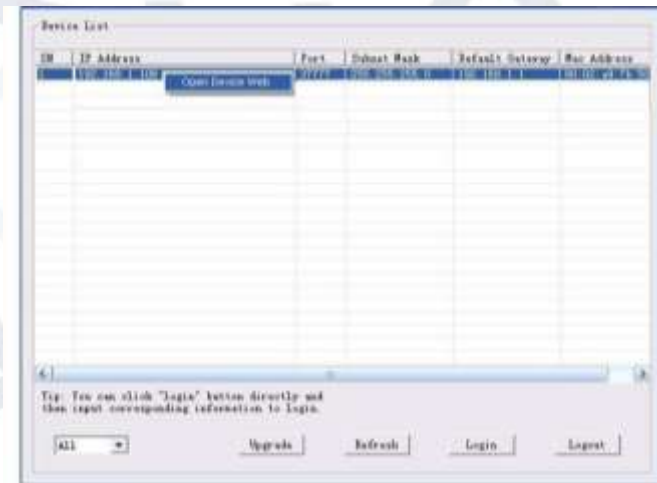


Figure 8-2 Search interface 2

Select the 'Open Device Web' item; you can go to the corresponding web login interface (see Figure 8-3).

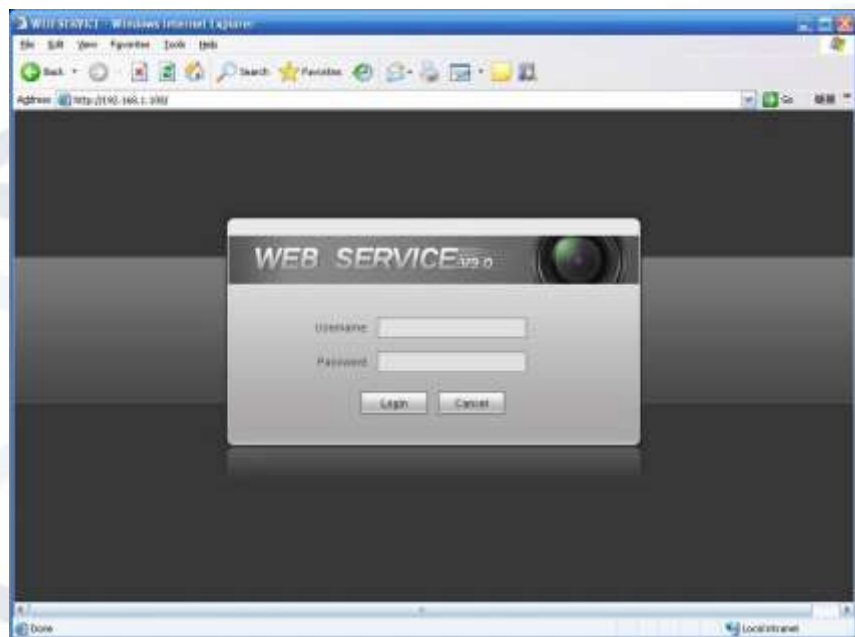


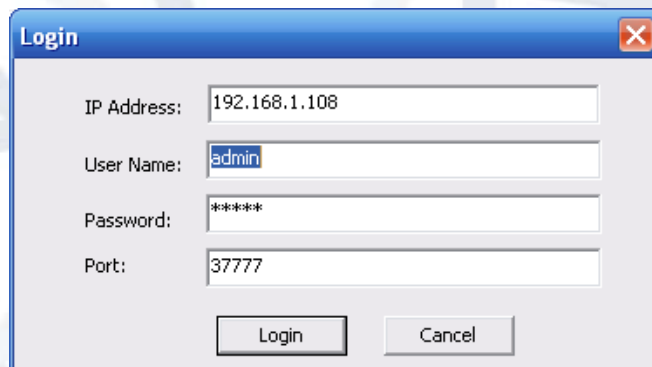
Figure 8-3 Web login

If you want to modify the device IP address without logging in to the device web interface, you can go to the configuration tool's main interface to set.

In the configuration tool's search interface (Figure 8-1), please select a device IP address and then double click it to open the login interface. Or you can select an IP address and then click the Login button to go to the login interface. See Figure 8-4.

In Figure 8-4, you can view device IP address, user name, password and port. Please modify the corresponding information to login. Please note the port information here shall be identical with the port value you set in TCP port in Web Network interface. Otherwise, you cannot login the device.

If you are using device background upgrade port 3800 to login, other setups are all invalid.

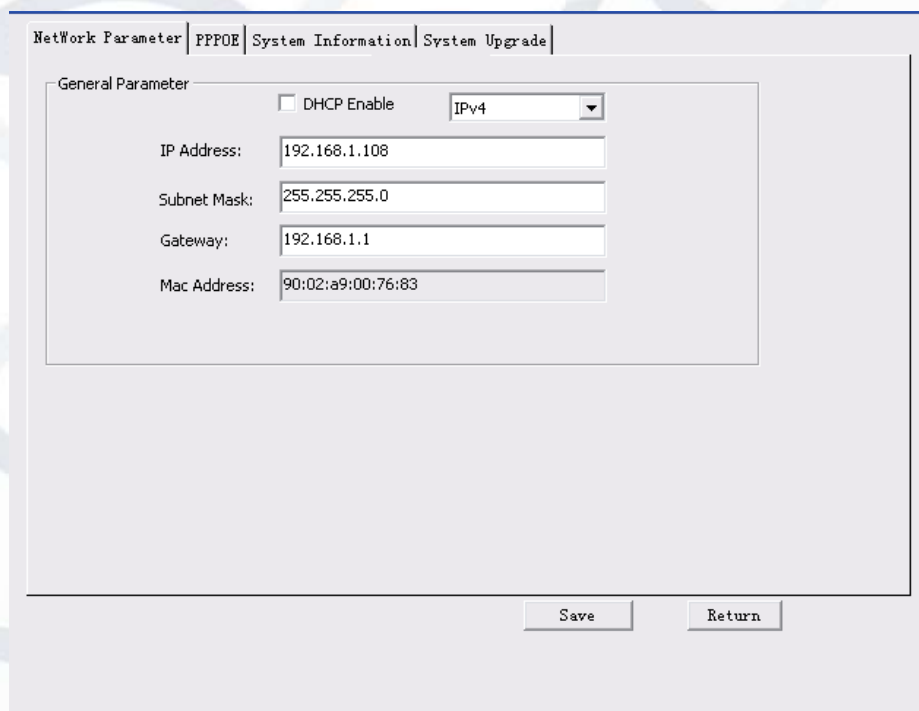
A login dialog box titled "Login" with a close button (X) in the top right corner. It contains four input fields: "IP Address:" with the value "192.168.1.108", "User Name:" with the value "admin", "Password:" with the value "*****", and "Port:" with the value "37777". At the bottom, there are two buttons: "Login" and "Cancel".

IP Address:	192.168.1.108
User Name:	admin
Password:	*****
Port:	37777

Login Cancel

Figure 8-4 Login prompt

After you logged in, the configuration tool main interface is shown as below. See Figure 8-5.

The main configuration interface of the quick configuration tool. It has a tabbed interface with four tabs: "NetWork Parameter", "PPPOE", "System Information", and "System Upgrade". The "NetWork Parameter" tab is selected. Inside this tab, there is a "General Parameter" section. It includes a checkbox for "DHCP Enable" (unchecked) and a dropdown menu for "IPv4". Below these are four input fields: "IP Address:" (192.168.1.108), "Subnet Mask:" (255.255.255.0), "Gateway:" (192.168.1.1), and "Mac Address:" (90:02:a9:00:76:83). At the bottom of the window, there are two buttons: "Save" and "Return".

NetWork Parameter PPPOE System Information System Upgrade	
General Parameter	
<input type="checkbox"/> DHCP Enable	IPv4
IP Address:	192.168.1.108
Subnet Mask:	255.255.255.0
Gateway:	192.168.1.1
Mac Address:	90:02:a9:00:76:83

Save Return

Figure 8-5 Main interface

For detailed information and operation instructions of the quick configuration tool, please refer to the **Quick Configuration Tool User's Manual** included in the resources CD.

9 Web Operation

This IP camera product supports the Web access and management using a PC.

Web includes several modules: monitor channel preview, system configuration, alarm, etc.

9.1 Network Connection

Please follow the steps listed below for network connection:

- Make sure the network camera has connected to the network properly.
- Please set the IP address, subnet mask and gateway of the PC and the network camera respectively. Network camera default IP address is 192.168.1.108. Subnet mask is 255.255.255.0. Gateway is 192.168.1.1
- Use order ping `***.***.***.***(* network camera address)` to check connection is OK or not.

9.2 Login and Logout

1. Open web browser and input network camera address in the address bar.

For example, if your camera IP is 192.168.1.108, then please input **http:// 192.168.1.108** into the web browser's address bar. See Figure 9-1.

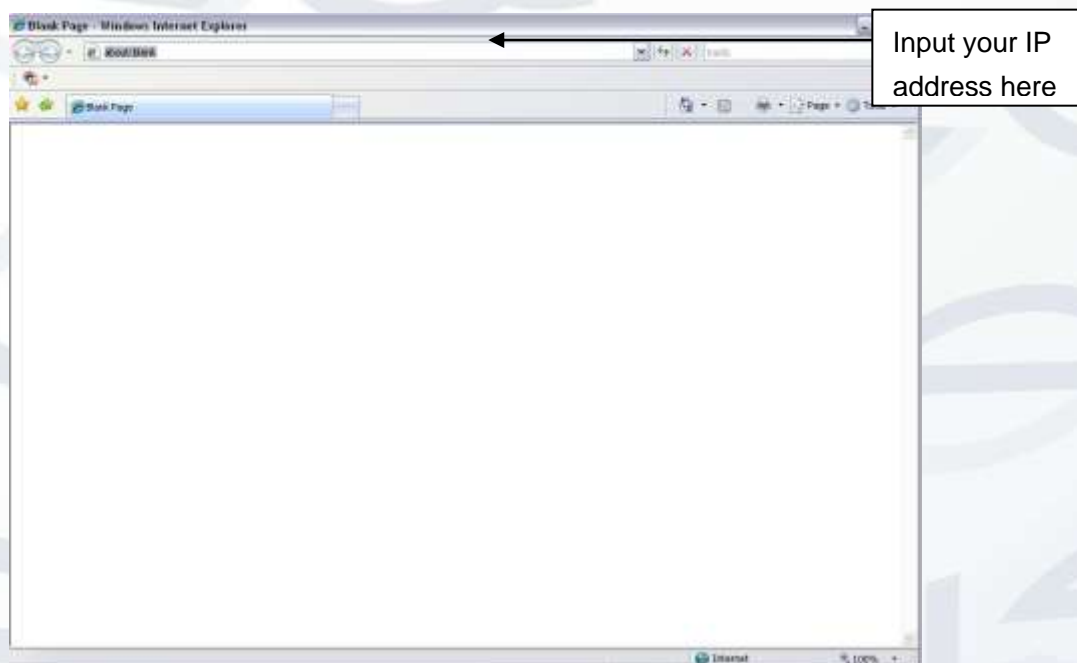


Figure 9-1 IP address

2. The login interface is shown as below. See Figure 9-2.
3. Please input your user name and password.
4. Default factory name is admin and password is admin.

Note: For security reasons, please modify your password after you first login.

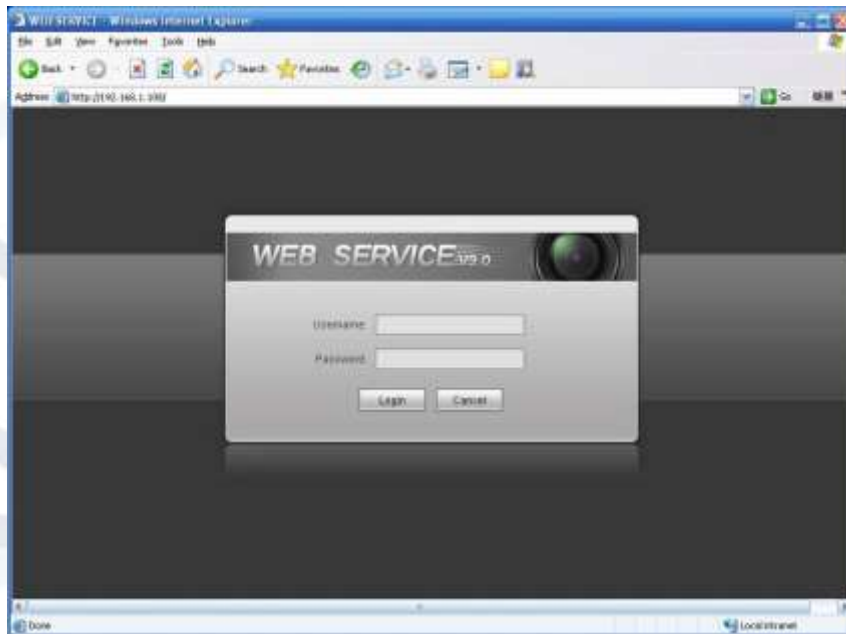


Figure 9-2 Web login

If it is your first time logging in, the system pops up warning information to ask you whether to install the control '**webrec.cab**' or not, after you have logged in for one minute. Please click OK button, the system can automatically install the control. When system is upgrading, it can overwrite the previous Web as well.

If you can't download the ActiveX file, please check whether you have installed the plug-in to disable the control download. Or you can lower the web browser's security level. See Figure 9-3.

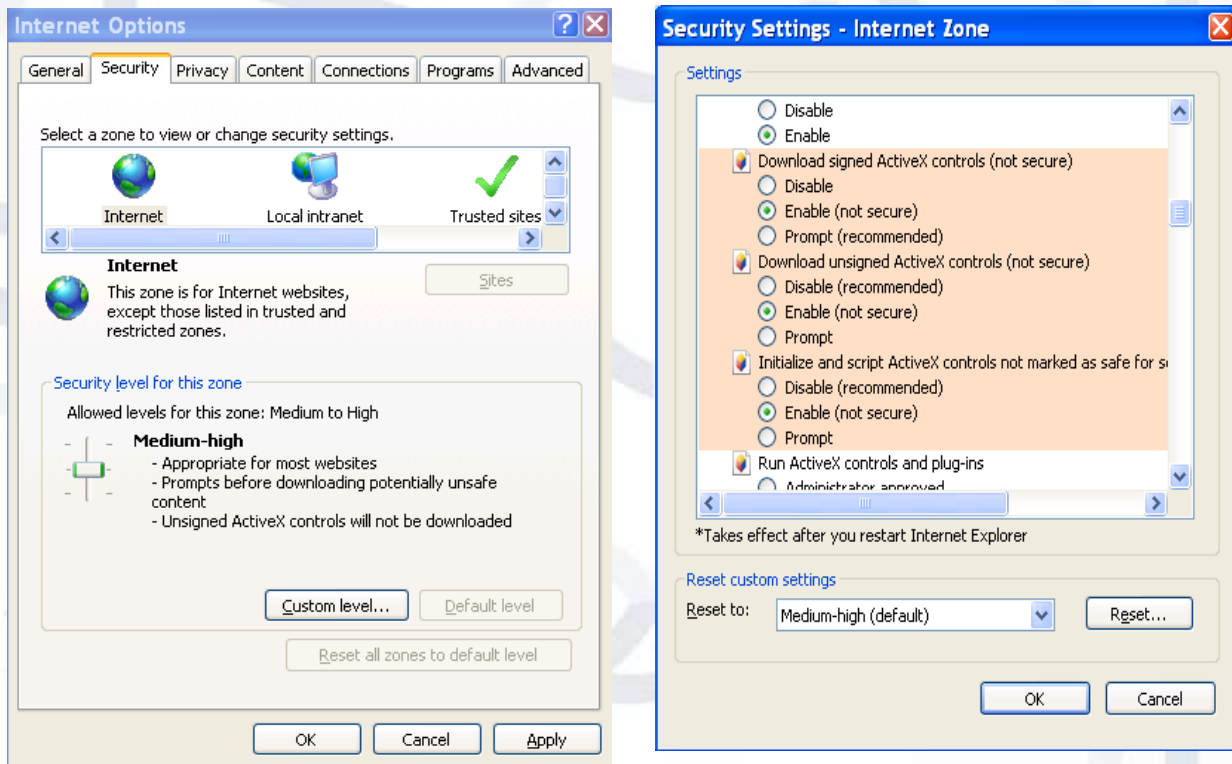


Figure 9-3 IE security level

After you logged in, you can see the main window. See Figure 9-4:

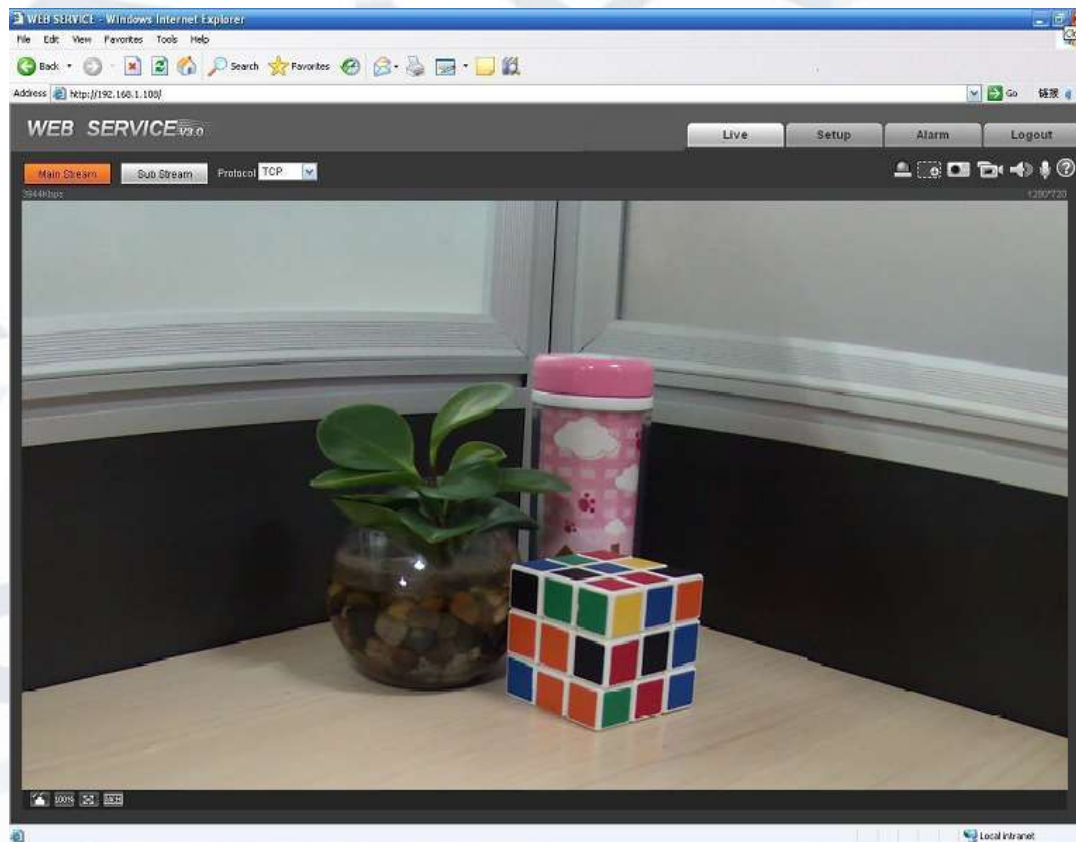


Figure 9-4 Web monitoring window

10 APPENDIX ABOUT RS485 BUS

10.1 RS485 Bus Main Feature

RS485 is semi duplex communication cable with an impedance of $120\ \Omega$. Its maximum load amount is 32 effective loads (including main control device and the devices that need to be charged).

10.2 RS485 Bus Transmission Distance

When we take a 0.56mm (24AWG) twisted-pair to use as a communication cable, the maximum transmission distances (theoretically) are listed below (according to different baud rates).

Baud Rate	Max Distance
2400 BPS	1800M
4800 BPS	1200M
9600 BPS	800M

In the following situations, the maximum transmission distance will become shorter according to these three factors:

- The communication cable is a little bit thin;
- The surrounding environment has strong electromagnetic interference;
- There are too much devices connected to the RS485 bus;

The opposite of these factors will mean the maximum transmission distance will become longer.

10.3 The Problem in Practical Use

In practical usage, we usually adopt star type connection. The terminal resistance shall connect to the furthest two devices (Such as device 1# and device 15# in Figure 10-1). But this connection method does not conform to the RS485 Bus standard. When the distances between devices are too long, signal reflection occurs and anti-jamming decreases, thus the signal reliability becomes very low. You can see that the speed dome is not under control or the speed dome is running automatically and cannot stop.

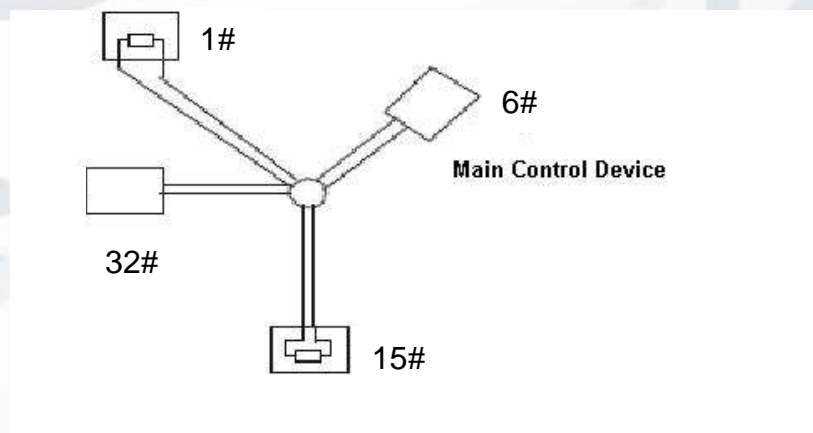


Figure 10-1

In this situation, we recommend RS485 distributor. This device can turn a star type connection into the connection that conforms to the RS485 bus industry standard, which can avoid the above mentioned problems and enhance communication reliability. See Figure 10-2.

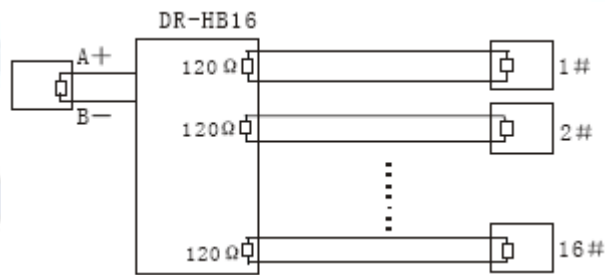


Figure 10-2

10.4 RS485 Bus FAQ

Phenomenon	Possible Reasons	Solution
Speed dome can run self-diagnosis but I cannot control it.	<ul style="list-style-type: none"> ● Host address (baud rate) and speed dome address (baud rate) do not match; ● Positive and negative end of RS485 Bus are not connected correctly; ● Connection cable is loose; ● RS485 Bus connections are cut off; 	<ul style="list-style-type: none"> ● Modify host or speed dome setup ; ● Switch RS485 positive end and negative end; ● Fix connection cable firmly; ● Replace RS485 Bus.
I can control the speed dome but the movement is not smooth	<ul style="list-style-type: none"> ● RS485 Bus connections are poor; ● One of the RS485 buses is offline; ● The distance between host and speed dome is too far; ● Too many speed domes are connected in parallel. 	<ul style="list-style-type: none"> ● Connect RS 485 Bus again; ● Replace RS485 Bus; ● Add terminal matching resistance; ● Add RS485 distributor.

6 FAQ

10.5 Daily Maintenance

Please clean dome cover regularly to continue receiving clear imagery. Handle the cover with care. Use water to wash. Don't use a cloth to clean. Use mild detergent to clean the cover if there is too much dust to just.

Note:

Please take care not to touch plating surface with bare hands or skin, as this might transfer bodily perspiration upon it and the acidity of the perspiration may erode it. Uncovered hands may also cause nail scratches to the dome cover when handling. This will result in blurred images and impaired visual monitoring when using the device.

10.6 Problems and Solutions

SYMPTOM	CAUSE	SOLUTION
No self-diagnosis, no video signal when I connect dome to power.	Red LED is not on. <ul style="list-style-type: none">Your power supplying does not apply to the power. Or connection is too loose.Power off or transformer problem.	<ul style="list-style-type: none">Check power is connected or properly earthed.Check power supply condition or check transformer.
	Red LED light on the power board is on. <ul style="list-style-type: none">Power supplying is lowSomething wrong with power board.	<ul style="list-style-type: none">Use a multimeter to check dome load.Please contact retailer to replace power board.
No self-diagnosis. Camera makes a noise.	Power supply amount is inadequate.	Replace power supply.
	Mechanical malfunction.	An electrical engineer will be needed to fix device.
Video signal loss occurs during high speed rotation.	Power supply is not sufficient	Replace power supply.
Video signal is not successive	Circuit connection are too loose.	Connect tightly.
	Video switch or power problem	Need electrical engineer help.
Video is not clear.	Focus in manual mode.	Control manually.
	Dome cover is dirty.	Wash dome cover
During camera switch, there is a tilt movement in the monitor.	Camera power is not in the same Phase.	When several domes are connected to one transformer, please connect the transformer output cable to the domes' same side.

Note

- This manual is for reference only. Slight difference may be found in the user interface.
- All the designs and software here are subject to change without prior written notice.
- Please visit our website or contact your local service engineer for more information.

For more information about our DVRs and available cameras & accessories, please visit our website:

www.adata.co.uk

Alternatively scan this QR code with your smart phone to be directed instantly to our website:

